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HEADLINE: Saving energy, saving dollars;
Energy audit helps Olathe homeowner learn ways to keep home weathertight

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BODY:
DAVID EULITT/The Kansas City Star Julie Quickel and her daughter, Haley, 8, have made some modifications to their Olathe home which they hope will lower their heating costs over the winter.
DAVID EULITT/The Kansas City Star

The time had come.

Julie Quickel and her family decided earlier this year to make some improvements on their Olathe home that would make it more comfortable and reduce utility bills that were averaging about $265 per month.

But what sort of improvements should be made proved to be a trickier decision. New and more efficient windows seemed a logical move. But before spending several thousand dollars on them, Quickel decided to have an energy audit that would provide an estimate of energy savings and the costs of various improvements.

In the end, the audit recommended that reducing air leakage and improving insulation would be a better investment than buying new windows. The repairs were finished last month and Quickel says the house is not only more comfortable but she's looking forward to recovering the $4,000 cost of the improvements in four years or less.

"I don't think I could have done this by myself," said Quickel.

The prospect of higher heating bills already has many area consumers pulling out caulk guns and opening wallets in the hope that various quick-fix home improvements will curb energy use and save money. The fact that natural gas prices have been high for most of the year makes the economics of energy conservation especially appealing this winter.

But as Quickel discovered, not even energy conservation is simple. Some projects may not save as much as promised while some improvements can end up costing so much in relation to the energy saved that there's not a realistic expectation of recovering the expense.

The financial trade-offs make it all the more important to come up with a plan for energy-saving projects that will generate the most bang for the buck.

"It sometimes drives me crazy what is done to try to save (energy)," said Russ Rudy, a consultant to the Metropolitan Energy Center in Kansas City who performs energy audits. He audited Quickel's home.

Energy audits were once widely available and offered by utilities as part of the country's effort to increase energy conservation. While most utilities no longer offer the audits, the service hasn't disappeared. Those looking for an auditor can contact the nonprofit Metropolitan Energy Center for names of those who provide them. The center's telephone number is **(816) 531-7283**.

In Quickel's home, the majority of the energy savings should come from reducing air leakage which can allow warm air to escape the house while allowing cooler air to enter. That a leaky residence increases heating bills isn't news to most consumers. Weather-stripping and caulking are inevitably on any list of home energy efficiency tips.

But many areas that allow cold air in (or warm air out) are often overlooked. For example, lights that are recessed into attics, often called can lights, are a big source of leakage but require special precautions when sealing them to prevent overheating and a fire.

The air leaks in Quickel's home were discovered by using a blower door, which drew air out of the house and made it easier to detect the leaks. The improvements involved more precise weather-stripping and caulking.

One of the biggest traps for consumers is failing to make a realistic estimate of what energy-conservation measures will save and then considering what it will cost to attain those savings. The payback can take so long that a homeowner will likely move before recovering the expense, experts say..

Take, for example, new windows. Improving a home's value and appearance are two good reasons for replacement windows. But as energy-conservation measures, they are typically near the bottom of the list partly because of their cost.

Rudy described a home he audited that already had wooden windows with storms. By upgrading to double-pane windows -- with the space between the glass filled with argon gas to improve efficiency -- the total monthly savings for the home

would be $7 per month. The investment looks particularly bad when you consider that just one window can cost more than $500 and the homeowner could have spent up to $10,000 to replace all the windows.

By comparison, insulating the home's attic, which had no insulation, would save $147 per month if insulated to R-28. The cost: About $3,000. But the payback was less than three years, making it worth considering.

Consumers need to be aware of some nuances when estimating energy savings. The U.S. Department of Energy has calculated potential savings for replacing a single pane window that doesn't have a storm window. The savings, if replaced with a double-pane window, amounts to 27 percent off a total winter's heating bill. If replaced with a triple-pane window, the homeowner could realize a 38 percent savings.

Those are impressive savings but only if the original windows are single pane with no storm windows.

An average residence in the Kansas City area uses about 80,000 cubic feet of natural gas during the winter. That would mean that the winter's total gas utility bills would be roughly $720 per year. That would mean a savings of about $280 per year if triple-pane windows were installed. The payback, however, could exceed 30 years to recover the cost of those windows.

The same kind of analysis can also help you with other improvements.

A new gas furnace with 80 percent efficiency can cost about $2,000 while some of the new super-efficient models can cost from $2,500 to $5,000.

A furnace lasts about 21 years. Should a furnace with some useful service remaining ever be replaced? In some cases, it makes sense even though the payback can take at least 10 years. Older furnaces with pilot lights that are 65 percent efficient or less could be candidates for replacement.

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Cutting heating bills

These Web sites feature a wealth of information on how to save energy and reduce your heating bill.

Alliance to Save Energy: **www.ase.org**

Offers a variety of online guides dedicated to money-saving energy measures.

ENERGY STAR: www.energystar.gov

Contains a bevy of energy-saving insights, from home insulation to appliances and home heating systems.

Home Energy Saver: HomeEnergySaver.lbl.gov

Enter your ZIP code to access neighborhood-specific energy information and tips.

Pennsylvania Resources Council: **www.prc.org**

Provides list of 20 wintertime energy conservation tips.

U.S. Department of Energy: www.eere.energy

Details how to save money and energy at home during the winter.

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